§ 238.115 Emergency lighting.

(a) This section applies to each passenger car ordered on or after September 8, 2000, or placed in service for the first time on or after September 9, 2002. This section applies to each level of a multi-level passenger car.

(b) Emergency lighting shall be provided in each passenger car and shall include the following:

(1) A minimum, average illumination level of 1 foot-candle measured at floor level adjacent to each exterior door and each interior door providing access to an exterior door (such as a door opening into a vestibule);

(2) A minimum, average illumination level of 1 foot-candle measured 25 inches above floor level along the center of each aisle and passageway;

(3) A minimum illumination level of 0.1 foot-candle measured 25 inches above floor level at any point along the center of each aisle and passageway; and

(4) A back-up power system capable of:

(i) Operating in all equipment orientations within 45 degrees of vertical;

(ii) Operating after the initial shock of a collision or derailment resulting in the following individually applied accelerations:

(A) Longitudinal: 8g;

(B) Lateral: 4g; and

(C) Vertical: 4g; and

(iii) Operating all emergency lighting for a period of at least 90 minutes without a loss of more than 40% of the minimum illumination levels specified in this paragraph (b).

§ 238.117 Protection against personal injury.

On or after November 8, 1999, all moving parts, high voltage equipment, electrical conductors and switches, and pipes carrying hot fluids or gases on all passenger equipment shall be appropriately equipped with interlocks or guards to minimize the risk of personal injury. This section does not apply to the interior of a private car.

§ 238.119 Rim-stamped straight-plate wheels.

(a)(1) Except as provided in paragraph (a)(2) of this section, on or after November 8, 1999, no railroad shall place or continue in service any vehicle, other than a private car, that is equipped with a rim-stamped straight-plate wheel if a brake shoe acts on the tread of the wheel for the purpose of slowing the vehicle.

(2) A commuter railroad may continue in service a vehicle equipped with a Class A, rim-stamped straight-plate wheel mounted on an inboard-bearing axle until the railroad exhausts its replacement stock of wheels held as of May 12, 1999, provided the railroad does not modify the operation of the vehicle in any way that would result in increased thermal input to the wheel during braking.

(b) A rim-stamped straight-plate wheel shall not be used as a replacement wheel on a private car that operates in a passenger train if a brake shoe acts on the tread of the wheel for the purpose of slowing the car.

(c) The requirements of this section do not apply to a wheel that is periodically tread-braked for a short duration by automatic circuitry for the sole purpose of cleaning the wheel tread surface.

§ 238.121 Emergency communication.

(a) *PA system (public address system).* (1) *Existing Tier I passenger cars.* On or after January 1, 2012, each Tier I passenger car shall be equipped with a PA system that provides a means for a train crewmember to communicate by voice to passengers of his or her train in an emergency situation.

(2) *New Tier I and all Tier II passenger cars.* Each Tier I passenger car ordered on or after April 1, 2008, or placed in service for the first time April 1, 2010, and all Tier II passenger cars shall be equipped with a PA system that provides a means for a train crewmember to communicate by voice to passengers of his or her train in an emergency situation. The PA system shall also provide a means for a train crewmember to communicate by voice in an emergency situation to persons in the immediate vicinity of his or her train (*e.g.*, persons on the station platform). The PA system may be part of the same system as the intercom system.

(b) *Intercom system.* (1) *New Tier I and all Tier II passenger cars.* Each Tier I passenger car ordered on or after April

1, 2008, or placed in service for the first time on or after April 1, 2010, and all Tier II passenger cars shall be equipped with an intercom system that provides a means for passengers and crewmembers to communicate by voice with each other in an emergency situation. Except as further specified, at least one intercom that is accessible to passengers without using a tool or other implement shall be located in each end (half) of each car. If any passenger car does not exceed 45 feet in length, or if a Tier II passenger car was ordered prior to May 12, 1999, only one such intercom is required. The intercom system may be part of the same system as the PA system.

(2) *Marking and instructions.* The following requirements apply to each Tier I passenger car on or after April 1, 2010 and to all Tier II passenger cars:

(i) The location of each intercom intended for passenger use shall be conspicuously marked with luminescent material; and

(ii) Legible and understandable operating instructions shall be posted at or near each such intercom.

(c) *Back-up power.* PA and intercom systems shall have a back-up power system capable of—

(1) Operating in all equipment orientations within 45 degrees of vertical;

(2) Operating after the initial shock of a collision or derailment resulting in the following individually applied accelerations:

(i) Longitudinal: 8g;

(ii) Lateral: 4g; and

(iii) Vertical: 4g; and

(3) Powering each system to allow intermittent emergency communication for a minimum period of 90 minutes. Intermittent communication shall be considered equivalent to continuous communication during the last 15 minutes of the 90-minute minimum period.

[73 FR 6402, Feb. 1, 2008]

§ 238.123 Emergency roof access.

Except as provided in § 238.441 of this chapter—

(a) *Number and dimensions.* Each passenger car ordered on or after April 1, 2009, or placed in service for the first time on or after April 1, 2011, shall have a minimum of two emergency roof access locations, each with a minimum opening of 26 inches longitudinally (*i.e.*, parallel to the longitudinal axis of the car) by 24 inches laterally.

(b) *Means of access.* Emergency roof access shall be provided by means of a hatch, or a conspicuously marked structural weak point in the roof for access by properly equipped emergency response personnel.

(c) *Location.* Emergency roof access locations shall be situated as practical so that when a car is on its side—

(1) One emergency access location is wholly within each half of the roof as divided top from bottom; and

(2) One emergency access location is wholly within each half of the roof as divided left from right. (*See* Figure 3 to this subpart.)

(d) *Obstructions.* The ceiling space below each emergency roof access location shall be free from wire, cabling, conduit, and piping. This space shall also be free of any rigid secondary structure (*e.g.*, a diffuser or diffuser support, lighting back fixture, mounted PA equipment, or luggage rack) where practicable. If emergency roof access is provided by means of a hatch, it shall be possible to push interior panels or liners out of their retention devices and into the interior of the vehicle after removing the hatch. If emergency roof access is provided by means of a structural weak point, it shall be permissible to cut through interior panels, liners, or other non-rigid secondary structures after making the cutout hole in the roof, provided any such additional cutting necessary to access the interior of the vehicle permits a minimum opening of the dimensions specified in paragraph (a) to be maintained.

(e) *Marking and instructions.* Each emergency roof access location shall be conspicuously marked with retroreflective material of contrasting color. As further specified, legible and understandable instructions shall be posted at or near each such location. If emergency roof access is provided by means of a structural weak point—

(1) The retroreflective material shall conspicuously mark the line along which the roof skin shall be cut; and